

WHAT IS CLAIMED IS:

1 1. An open loop controller for a sampled grating distributed bragg reflector
2 (SGDBR) laser, comprising:
3 a table of voltages and current settings, each entry in the table corresponding to a
4 separate operating point of the SGDBR laser, each entry in the table comprising:
5 a first mirror current;
6 a second mirror current;
7 a phase current; and
8 a gain current,
9 the first mirror current, second mirror current, phase current, and gain current controlling at
10 least one of a group comprising: an optical output power and an output wavelength of the SGDBR
11 laser; wherein when the controller is given a selected optical power and output wavelength, the
12 controller selects an entry from the table to control the laser at substantially the selected optical
13 power and output wavelength.

- 1 2. The controller of claim 1, further comprising a temperature regulator.
- 1 3. The controller of claim 2, wherein the temperature regulator regulates the
- 2 SGDBR laser to a fixed, pre-selected temperature.
- 1 4. The controller of claim 1, wherein the table is filled with unique values for
- 2 each SGDBR laser.
- 1 5. The controller of claim 4, wherein the unique values are determined using a
- 2 calibration routine.
- 1 6. The controller of claim 1 wherein each entry in the table further comprises
- 2 an amplifier current.